

AMENDMENTS

In the Claims

Current Status of Claims

1. **(currently amended)** A refrigeration process comprising the steps of:
compressing a lower temperature, lower pressure vapor refrigerant to a higher temperature, higher pressure vapor refrigerant,
condensing the higher temperature, higher pressure vapor refrigerant into a liquid refrigerant at the higher pressure,
evaporatively cooling the liquid refrigerant under adiabatic conditions to form a cooled liquid refrigerant,
powering an engine with a pressure difference between the liquid refrigerant and the lower pressure vapor refrigerant, and
transferring a quantity of heat ~~form~~ from a substance to the cooled liquid refrigerant to cool the substance and convert the cooled liquid refrigerant into the lower temperature, lower pressure vapor refrigerant.

2. **(canceled)**

3. **(canceled)**

4. **(canceled)**

5. **(canceled)**

6. **(canceled)**

7. **(previously amended)** A refrigeration system comprising:
at least one compressor for compressing a lower pressure, lower temperature vapor refrigerant into a higher pressure, higher temperature vapor refrigerant,
at least one condenser for condensing the higher pressure, higher temperature vapor refrigerant into a liquid refrigerant at the higher pressure,
at least one cooling vessel adapted to cool the liquid refrigerant, under thermally isolated, adiabatic conditions, to form a cooled liquid refrigerant having a lower temperature,

1 an engine adapted to be powered by a pressure difference between the liquid
2 refrigerant and the lower pressure, lower temperature vapor refrigerant, and
3 at least one evaporator adapted to bring the cooled liquid refrigerant and a substance
4 into thermal contact cooling the substance and forming the lower pressure, lower temperature
5 vapor refrigerant.

1 **8.(previously amended)** The system of claim 7, wherein the cooling vessel includes a liner
2 of low thermal conductivity adapted to thermally isolate the liquid refrigerant so that the
3 liquid refrigerant is evaporatively cooled under adiabatic conditions.

1 **9.(previously amended)** A refrigeration system comprising:

2 a compressor adapted to compress a lower pressure, lower temperature vapor
3 refrigerant into a higher pressure, higher temperature vapor refrigerant,

4 a condenser adapted to condense the higher pressure, higher temperature vapor
5 refrigerant into a liquid refrigerant at the higher pressure,

6 a cooling evaporator system adapted to cool the liquid refrigerant, under thermally
7 isolated, adiabatic conditions, to form a cooled liquid refrigerant at a lower temperature and
8 to bring the cooled liquid refrigerant into thermal contact with a substance cooling the
9 substance and forming the lower pressure, lower temperature refrigerant, and

10 an engine adapted to be powered by a pressure difference between the liquid
11 refrigerant and the lower pressure, lower temperature vapor refrigerant.

1 **10.(previously amended)** The system of claim 9, wherein the cooling evaporator system
2 includes cooling vessel and an evaporator.

1 **11.(previously amended)** The system of claim 10, wherein the cooling vessel includes a
2 liner of low thermal conductivity adapted to thermally isolate the liquid refrigerant so that
3 the liquid refrigerant is evaporatively cooled under adiabatic conditions.

1 **12.(previously amended)** The system of claim 9, wherein the cooling evaporator system
2 includes a liner of low thermal conductivity adapted to thermally isolate the liquid refrigerant
3 so that the liquid refrigerant is evaporatively cooled under adiabatic conditions.